AMENDMENTS TO THE CLAIMS

1. (original) An amplifier with substantially fixed input impedance when operating in a plurality of gain modes, the amplifier comprising:
an input port for receiving an input signal;
a gain circuit for amplifying the input signal by corresponding gain ratios in various gain modes;
a plurality of resistive negative feedback circuits electrically connected to the input port and the gain circuit for keeping the input impedance of the amplifier substantially fixed in various gain modes; and
an output port for outputting the input signal amplified by the gain circuit.

2. (original) The amplifier of claim 1 wherein in a gain mode, a feedback signal is fed back to the input port via at least a corresponding resistive negative feedback circuit so as to keep the input impedance of the amplifier substantially fixed in various gain modes.

3. (original) The amplifier of claim 2 further comprising at least a switch device electrically connected to at least a predetermined resistive negative feedback circuit for determining whether the feedback signal is fed back to the input port via the predetermined resistive negative feedback circuit according to various gain modes.

4. (original) The amplifier of claim 1 wherein the gain

circuit comprises a plurality of bipolar junction transistors or a plurality of MOS transistors.

5. (original) The amplifier of claim 1 wherein the plurality of resistive negative feedback circuits are respectively a resistor electrically connected to a capacitor.

6. (original) The amplifier of claim 1 being a low-noise amplifier.

7. (original) The amplifier of claim 6 being applied to a receiver of a wireless communication system.

8. (original) A method used in an amplifier for keeping the input impedance of the amplifier substantially fixed in a plurality of gain modes, the amplifier comprising a gain circuit and a plurality of resistive negative feedback circuits, the method comprising:

utilizing the gain circuit to switch the amplifier among various gain modes; and

utilizing the plurality of resistive negative feedback circuits to keep the input impedance of the amplifier substantially fixed in various gain modes.

9. (original) The method of claim 8 wherein the amplifier further comprises an input port and an output port, the method further comprising:

utilizing the input port to receive an input signal;

utilizing the gain circuit to amplify the input signal by

corresponding gain ratios in various gain modes;

making a feedback signal be fed back to the input port via at least a corresponding resistive negative feedback circuit in various gain modes so that the input impedance of the amplifier remains substantially fixed in various gain modes, wherein the feedback signal is related to the input signal; and

utilizing the output port to output the input signal amplified by the gain circuit.

10. (original) The method of claim 9 wherein the amplifier further comprises a switch device electrically connected to a predetermined resistive negative feedback circuit, the method further comprising:

turning on or turning off the switch device according to the various gain modes to determine whether the feedback signal passes the predetermined resistive negative feedback circuit to the input port.

11. (original) The method of claim 9 wherein the amplifier further comprises a plurality of switch devices respectively electrically connected to the plurality of resistive negative feedback circuits, each switch device corresponding to a resistive negative feedback circuit, the method further comprising:

turning on at least a switch device in each gain mode so that the feedback signal is fed back to the input port via the corresponding resistive negative feedback circuit.

12. (original) The method of claim 8 wherein the plurality of resistive negative feedback circuits are respectively a resistor electrically connected to a capacitor.

13. (original) The method of claim 8 wherein the amplifier is a low-noise amplifier.

14. (withdrawn) A differential amplifier with substantially fixed input impedance when operating in a plurality of gain modes, the differential amplifier comprising:

a positive input port for receiving a positive input signal;

a negative input port for receiving a negative input signal;

a positive amplifier circuit electrically connected to the positive input port, the positive amplifier circuit comprising:

a positive gain circuit for amplifying a positive input signal by corresponding gain ratios; and

a plurality of positive resistive negative feedback circuits for keeping the input impedance of the positive amplifier circuit substantially fixed in various gain modes; and

a negative amplifier circuit electrically connected to the negative input port, the negative amplifier circuit comprising:

a negative gain circuit for amplifying a negative input signal by corresponding gain ratios; and

a plurality of negative resistive negative feedback circuits for keeping the input impedance of the negative amplifier circuit substantially fixed in

various gain modes;

a positive output port electrically connected to the positive amplifier circuit for outputting the processed positive input signal; and

a negative output port electrically connected to the negative amplifier circuit for outputting the processed negative input signal.

15. (withdrawn) The differential amplifier of claim 14 wherein the input impedance of the positive amplifier circuit is the same as the input impedance of the negative amplifier circuit, and the input impedance of the differential amplifier is a mathematical combination between the input impedance of the positive amplifier circuit and the input impedance of the negative amplifier circuit.

16. (withdrawn) The differential amplifier of claim 14 wherein in each gain mode, in the positive amplifier circuit, a positive feedback signal is fed back to the positive input port via at least a corresponding positive resistive negative feedback circuit, so that the input impedance of the positive amplifier circuit remains substantially fixed in various gain modes.

17. (withdrawn) The differential amplifier of claim 16 wherein the positive amplifier circuit further comprises at least a switch device electrically connected to at least a predetermined positive resistive negative feedback

circuit for determining whether the positive feedback signal passes the predetermined positive resistive negative feedback circuit to the positive input port according to the various gain modes.

18. (withdrawn) The differential amplifier of claim 16 wherein in the positive amplifier circuit, the plurality of positive resistive negative feedback circuits are respectively a resistor electrically connected to a capacitor.

19. (withdrawn) The differential amplifier of claim 14 wherein in each gain mode, in the negative amplifier circuit, a negative feedback signal is fed back to the negative input port via at least a corresponding negative resistive negative feedback circuit, so that the input impedance of the negative amplifier circuit remains substantially fixed in various gain modes.

20. (withdrawn) The differential amplifier of claim 19 wherein the negative amplifier circuit further comprises at least a switch device electrically connected to at least a predetermined negative resistive negative feedback circuit for determining whether the negative feedback signal passes the predetermined negative resistive negative feedback circuit to the negative input port according to various gain modes.

21. (withdrawn) The differential amplifier of claim 19

wherein in the negative amplifier circuit, the plurality of negative resistive negative feedback circuits are respectively a resistor electrically connected to a capacitor.

22. (withdrawn) The differential amplifier of claim 14 being a low-noise differential amplifier applied to a receiver of a wireless communication system.